

November 9, 2021

Hello Chairman Holmberg, members of the Committee.

My name is Greg Tehven, a fifth generation North Dakotan from a farming family. I'm also the CEO of Emerging Prairie, an organization that leads Grand Farm Research and Education Initiative ("Grand Farm").

For months, we've worked with Senator Sorvaag, Representative Howe and a wide group of Senators and Representatives on our Grand Farm ARPA request. We are grateful and supportive of the Senate and House's recommendation to use \$10M towards our effort.

Grand Farm, a 501(c)(3), empowers a neutral platform for industry, farmers, higher education, and government to collaborate on autonomous and advanced agriculture technology. Grand Farm works regularly with companies and startups from North Dakota and around the world to better understand their products, provide capabilities for demonstration and development, and to amplify the technologies in North Dakota. Grand Farm currently operates a test site on donated agricultural acres to demonstrate and test new and innovative ag technologies.

It is clear that somewhere in the United States or around the world, a community will lead the efforts in agriculture technology development. We believe North Dakota needs to be that leader. By building on the state's investment in rural broadband, VANTIS, the LIFT program, the impact of House Bill 1425 from the 2021 session, and more, we can continue to enable our farmers to be the most advanced in the world.

We will support the growth of our current companies, attract more folks to the state, and upskill our workforce. An investment in Grand Farm will allow us to utilize a 1:1 match for the long term home of the Grand Farm in Cass County, allow us to continue our efforts to collaborate on research and demonstration, and give us the ability to invest in the future workforce needs of advanced technology in agriculture.

We are confident that over the use of the funds, we'll be able to support job growth. Companies in North Dakota will benefit from our work and be able to increase in size while we attract additional companies from the region. We'd anticipate 50 to 150 new jobs created in North Dakota each year.

We know ARPA funding is a one-time opportunity and are confident that an investment in Grand Farm will propel North Dakota agriculture into a leading position for modern agriculture technology. Because of the impact of COVID, our state's ag tech companies were



limited on trade show opportunities, sales growth, and the ability to attract talent. Grand Farm's Innovation Facility will help North Dakota's companies recover from the impact of COVID, amplify and increase research opportunities, and allow North Dakota to attract and retain companies in advanced technology in agriculture.

The time to invest in Grand Farm is now. We have significant momentum, from 53 private sector companies including Microsoft and CHS, engage with 60+ startups from across the world, and a growing number of educational institutions involved. As technology advances, connectivity increases, and autonomous solutions present themselves, an investment from North Dakota will allow us to lead, multiply resources, and solve real problems in agriculture: workforce challenges, labor concerns, safety concerns, and most importantly improving profitability for our farmers.

We are grateful for the leadership of both Senate and House members as well as the private sector for giving us confidence that an investment in Grand Farm will allow North Dakota to play offense, continue to support a critical industry in the state, and build a platform that will be a key collaborator with educational institutes, private sector, startups, and the capital-formation community.

Thank you for your consideration, and I would be pleased to answer any questions you might have.

Greg Tehven

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Grand Farm Innovation Facility

Overview

Grand Farm Research and Education Initiative (“Grand Farm”), is a North Dakota 501(c)(3) non-profit that accelerates collaboration and innovation to develop technologies for the farm of the future. Grand Farm is a subsidiary of Emerging Prairie, a North Dakota 501(c)(3) non-profit.

Grand Farm empowers a neutral platform for industry, producers, higher education, and government to collaborate on autonomous and advanced agriculture technology. Grand Farm works regularly with companies and startups from North Dakota and around the world to better understand their products, provide capabilities for demonstration and development, and to amplify the technologies in North Dakota. Grand Farm currently operates a test site on donated agricultural acres to demonstrate and test new and innovative ag technologies.

Requested Allocation: \$10M

- \$10M toward Grand Farm Innovation Facility planning, development, infrastructure, and construction (subject to 1:1 match)

This one-time request would leverage federal ARPA funds with private investments to establish a permanent, world-class destination innovation facility in North Dakota for innovation in advanced agricultural technology. It would enable robust project management capabilities for the building and operations of the facilities, ecosystem, and farm projects. And it would make possible expanded workforce development offerings beyond the existing software development bootcamp into cyber security, embedded software, and more.

Grand Farm is currently finalizing the process of selecting a permanent location in North Dakota for the Innovation Facility. This funding would carry momentum through selection of the location, directly into the preparation, planning, and construction of Grand Farm’s Innovation Facility.





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Impact

Since the launch in April 2019, Grand Farm has been working on growing a globally relevant ecosystem -- developing relationships with organizations from around the world. Now, Grand Farm is poised to focus this energy into an Innovation Facility driving significant positive impacts to North Dakota.

Grand Farm was developed to be additive to existing infrastructure, programs, and state/federal investments. The independent, neutral-platform allows for direct and rapid engagement with growers, industry, researchers, and government. This gaps-based approach maximizes investment into programs, facilities, and infrastructure.

The construction of the Grand Farm's Innovation Facility will:

- Engage Growers - The technology developed by industry and higher education at the Innovation Facility will make growers more efficient and make their jobs safer. In collaboration with North Dakota State University's extension, Grand Farm will work to bring this technology to growers. Grand Farm's Innovation Facility will also serve as a meeting place for growers and their organizations, showcasing modern and future technologies in agriculture.
- Multiply State Funding - Grand Farm's Innovation Facility will also be funded (and matched) through private contributions by individuals and organizations from around the world, multiplying North Dakota's investment into the project. To raise the matching funds for this project, Grand Farm will develop and launch a capital campaign. This capital campaign will bring in investments from individuals, philanthropic organizations, and corporations from a global setting -- many of which have already expressed their interest in supporting the development of an Innovation Facility.
- Support Agriculture and Technology Businesses - Grand Farm's Innovation Facility will provide businesses with office space, workshop space, test plot space, regular engagement with the agriculture and technology industries, and allow for scalable options for growth.

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- Attract Businesses to North Dakota - Leveraging Grand Farm’s rapidly growing, globally relevant ecosystem, and working with North Dakota resource partners, Grand Farm will attract businesses to North Dakota both nationally and internationally -- in-turn, growing North Dakota’s economy.

- Create High-Paying, High-Skilled Jobs - The attraction of businesses to North Dakota will create high-paying, high-skilled jobs in the agriculture and technology industries.
- Increase the Tech-Ready Workforce - To supplement traditional education efforts, Grand Farm’s Workforce Development Program will develop high-skilled, tech-ready workers to fill job gaps existing in agriculture and technology industries.
- Agriculture Safety - From 2012-to-2020 in North Dakota, there were 122 total reported incidents resulting in injuries (55) or death (67) in agriculture operations. Agriculture is considered one of the most dangerous jobs in the United States of America, and is often the most dangerous job in other countries. Innovations in agriculture technology often lead to safer environments for those in the agriculture industry.
- Access to Funding for Early Stage Startups and Researchers - Grand Farm has served as an attractor of venture capital for early-stage companies. This compliments North Dakota program’s, including: LIFT, ND Development Fund, Agriculture Products Utilization Committee, and the North Dakota Legacy Fund. Grand Farm continues to collaborate with University of North Dakota and North Dakota State University to bring federal grants to North Dakota.

Innovation Facility Construction Budget (from original \$25M request)

Preliminary Capital Budget for Phases of Grand Farm Innovation Facility

Planning, Feasibility, Predesign	\$ 150,000
Architectural Design of Master Plan	10% \$ 3,750,000
Land	160 acres \$ 960,000





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Construction costs; consulting expenses; project management fees; equipment, furniture and fixtures; utilities and non-utility infrastructure; and any other major expense.	est. \$500/sq ft for 75,000 sq ft \$ 37,500,000
Contingency, scope changes	10% \$ 3,750,000
Overrun	10% \$ 3,750,000
Construction financing (\$50M for 18 months)	4% interest rate \$ 3,000,000

Total \$ 52,860,000



Business Plan

Grand Farm's Innovation Facility is intentionally built around a business model which will be self-sustaining following completion of construction.

Annual Revenues
Events and Conferences Sponsorships \$350,000
Events and Conferences Tickets 100,000
Events and Conference Hosting 350,000
Co-Working Space Membership 75,000
Office Leases 400,000
Co-Location Leases 600,000
Shipping Access Fees 50,000
Technology Workshop Supplies 25,000
Technology Workshop Memberships 100,000
Test Plot Management Fees 300,000 Education Fees 300,000
Education Scholarships 250,000 Project Management Office 500,000
Partnerships 500,000
Direct Donations 100,000
Naming Rights 1,000,000
Total Estimated Annual Revenue \$5,000,000





Annual Expenses
Fully Loaded Direct Staff Costs (30 FTEs) \$2,890,000
Travel 250,000
Sponsorships for Grower Organizations 100,000
Startup Project Seed funds 100,000
Building Maintenance 60,000
Equipment Acquisition/lease 250,000
Farm Management 140,000 Utilities 120,000 Taxes 250,000 Equipment Maintenance 100,000 Insurance 80,000 Security 50,000 Marketing/events 400,000 Office supplies 20,000 Snow removal/Grounds maintenance 40,000
Total Estimated Annual Expenses \$4,850,000

As the facility is developed and comes to completion, further refinement will be required as it relates to the overall operating model with the goal of being able to self-support the operation at the forefront of decision making.



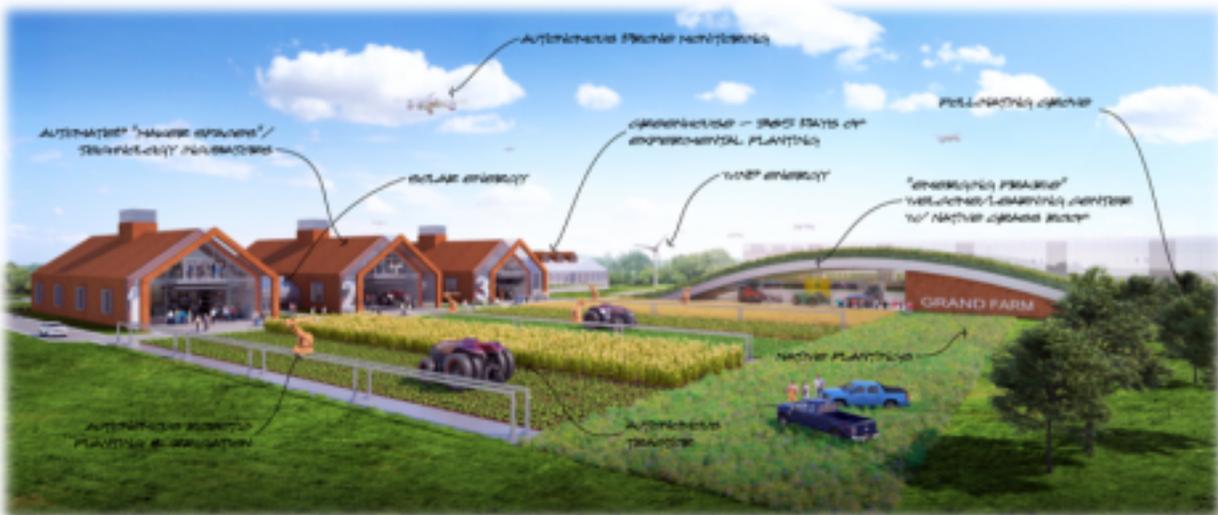


Appendix: Facility Vision

Grand Farm's Innovation Facility will grow and inspire businesses, organizations, and entrepreneurs nationally and internationally to collaborate in developing technological and human solutions for farming in a new era.

The cornerstone for the Innovation Facility is the main hub -- a rapid prototyping center that will sit on forty acres and will include a large conference and event space, offices, as well as several workspace areas. Grand Farm envisions these spaces will be where small businesses, corporations, educators, and entrepreneurs will collaborate on projects; share tools; learn; prototype novel ideas and designs into products; start ventures; and, share knowledge.

The main hub will ideally have a variety of resources available for prototyping purposes, including but not limited to 3D printers, CNC milling machines, laser cutters, a machine shop, and a robotics lab. Innovators who use the space will be able to immediately test their products in the fields that surround this hub, empowering the creators to investigate their product performance in a highly capable, real-world environment. The proximity of the facility to the testing area, small businesses, corporations, and startups, as well as larger farm equipment companies, will allow the participating entities to quickly transform their ideas into viable and commercializable products.



The Innovation Facility will allow for individuals and organizations to rapidly prototype products for testing; this space will also serve as a meeting and smaller event space. This requires the necessary space and equipment to accomplish this task. This is the first module of a much larger Innovation Facility to be developed. The focus of this facility will be to provide opportunities for collision and collaboration, where product ideas can be taken from ideation to reality. This building will primarily include the following components:



Entrance

Guests, tenants, and staff will be met with stairs leading up to the entrance of the Grand Farm hub.

Welcome Area

As people enter the hub, they are met with a welcome area. A receptionist will greet visitors and welcome back tenants and members. On the walls of the welcome area are displays, portraying information and video of farm operations in real-time. There is an area for seating. This welcome area serves doubly as a security point, preventing people without access to the makerspace and innovation center offices. There is an elevator to the second floor. Attached to the welcome area is a conference/classroom where meetings and presentations occur.

Workshop

Coming off of the welcome area is a community workshop. Worktables fill the room with space for product development and teams to talk through their innovative process. This space has 3D printers, Raspberry Pies, a mill for metal working, and product testing equipment like oscilloscopes. Attached to this are several private working rooms with locked doors. A technician desk is present where a full-time technician can maintain equipment and provide consultation.

Garage Workshop

For larger equipment, a garage workshop exists. This workshop will house small farm equipment for product development and testing. A garage door allows for direct access to the fields.

Offices

On the first and second floor of the hub are offices. Some of these offices will be for the Grand Farm staff. There are private offices to house tenant businesses. These offices provide individual desk space and group tables where product development can occur.

Event Room and Observatory

On the second floor is an event and conference room with windows overlooking the demonstration facility. This is where larger events occur and where groups can be hosted. This room will double as a group workroom when events are not occurring. This room will be modular, allowing for scalability with the size of events.



Fields

Grand Farm is currently utilizing more than 140 acres for demonstration and research purposes in the growing season 2021. The minimum number of acres for the 2022 growing season would be 160 acres.

Appendix: Detailed Plan

Innovation Facility Construction (original \$25M Request)

The \$52 million (with \$25 million from American Rescue Plan Act) to be spent towards Innovation Facility construction will include: planning, development, infrastructure, construction of buildings and launch. Below is a detailed breakdown of each phase and elements which will be included:

Phase 1: Planning (Start: January, 2022)

- Land Acquisition - Currently, Grand Farm is undergoing the selection process for the final site of the Innovation Facility. Once selected, the land will be acquired.
- Architect Engagement - Engagement of an architect to design the Innovation Facility, including land assets and building.

Phase 2: Development (Start: June, 2022)

- Capital Campaign - To raise matching funds, Grand Farm will utilize the architectural plans and business plan to design and launch a capital campaign.
- Engineering Plans - With the architecture plans, engineers will build out the overall engineering plan for the site.
- Security Plans - A consultant will be employed to identify potential security liabilities within the full facility build-out and identify solutions that can be implemented to offset risks.

Phase 3: Infrastructure (Start: January, 2023)

- Roads - The development of the road infrastructure to support traffic, construction, and shipping.
- Utilities - Connecting existing public infrastructure to the site, including water, sewer, and electricity.
- Connectivity - Bringing connectivity capabilities to the sites to both support building operations and projects on the Grand Farm.
- Land Development and Management - Preparation and management of land for a test plot environment to support AgTech projects on the site.





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- Equipment - Purchasing of equipment for the Innovation Lab, land management, and for outfitting the buildings.

Phase 4: Construction (Start April, 2023)

- Buildings - Construction of the buildings on the site which make up the Hub and the Wings of the main facility buildings.

Appendix: 2021 Sky, Gold, and Green Partners of Grand Farm

Sky Partners													
Gold Partners													
Green Partners													

Note: This list does not include ground-tier partners, which are early-stage startups within the Grand Farm ecosystem.



Appendix: Matching Funds Strategy

Note: Currently, this proposal includes funding to develop and launch a capital campaign. This statement is the initial thinking of Grand Farm as it relates to securing capital for the Innovation Campus. As the Capital Campaign is developed, this thinking could evolve.

Currently, Grand Farm intends on utilizing a tiered approach to raise the capital needed to build out the Innovation Facility. This includes four tiers of contributors which would be made up of: individual contributors, large corporate contributors, federal government grants, and economic development corporations.

- Tier 1: \$1,000,000+ in contributions. There have been 20 identified potential contributors to-date.
- Tier 2: \$50,000/year for 3 years in contributions (total \$150,000). There have been 30 identified potential contributors to-date.
- Tier 3: \$20,000+ in contributions. There have been more than 40 identified potential contributors to-date.
- Tier 4: Below \$20,000 in total contributions.

Grand Farm anticipates in the development of the capital campaign, more opportunities for contributors will be identified or emerge. The current list of potential contributors accounts for \$25.3 million in contributions.

